

60 Rec'd PCT/PTO 07 SEP 2001

FORM PTO-100 (REV. 10-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEYS DOCKET NUMBER 011.54	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If none, see 37 CFR 1.5)	
				09/926128	
INTERNATIONAL APPLICATION NO. PCT/SE00/00435		INTERNATIONAL FILING DATE March 6, 2000		PRIORITY DATE CLAIMED March 9, 1999	
TITLE OF INVENTION PLACING UNIT FOR A HUMAN BEING					
APPLICANT(S) FOR DO/EO/US Tomas BLOMQVIST; George KINIGALAKIS; Per HVASS					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input type="checkbox"/> This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).</li> <li>4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as published w/ International Search Report under 35 U.S.C. 371(c)(2). <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</li> <li>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</li> <li>10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol>					
Items 11 to 16 below concern document(s) or information included:					
<ol style="list-style-type: none"> <li>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>13. <input type="checkbox"/> A FIRST preliminary amendment. <ol style="list-style-type: none"> <li><input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</li> </ol> </li> <li>14. <input type="checkbox"/> A substitute specification.</li> <li>15. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li>16. <input type="checkbox"/> Other items or information:</li> </ol>					

09/926128-120601

U.S. APPLICATION NO. (if known) <b>09/926128</b> INTERNATIONAL APPLICATION NO. PCT/SE00/00435	ATTORNEY'S DOCKET NUMBER 01154																						
21. <input checked="" type="checkbox"/> The following fees are submitted: <b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):</b> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. .... <b>\$1000.00</b>  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... <b>\$860.00</b>  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... <b>\$710.00</b>  International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... <b>\$690.00</b> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) ..... <b>\$100.00</b> <b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>	<b>CALCULATIONS PTO USE ONLY</b>          <table style="width: 100%;"> <tr> <td style="width: 80%;"><b>\$1000.00</b></td> <td style="width: 20%;"></td> </tr> </table>	<b>\$1000.00</b>																					
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a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed.  b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.  c. <input type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is enclosed.  d. <input checked="" type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.																							
<b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.</b>  SEND ALL CORRESPONDENCE TO: Dennison, Scheiner, Schultz & Wakeman 612 Crystal Square 4 1745 Jefferson Davis Highway Arlington, VA 22202-8417 (703) 412-1155 Ext. 17 (703) 412-1161 FAX																							
<div style="text-align: right;">             SIGNATURE            Scott T. Wakeman            NAME            37,750            REGISTRATION NUMBER         </div>																							

09/926128

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The PTO did not receive the following

listed item(s)

No Postcard

09/926128-120501

PLACING UNIT FOR A HUMAN BEING

The present invention relates to a placing unit for a human being. Such units have special uses within the health-care industry, in medical care as well as dental care. In dental treatment, a large number of chemical products are used that have allergenic and toxic properties. These disadvantages, which pose health risks, can only be counteracted by traditional ventilation techniques based on general ventilation and some form of process ventilation. Existing installations for this purpose generally constitute an obstruction for the dental-care staff in cramped working spaces and further occasion high levels of noise. The invention can also be used in other work places where welding or soldering is performed or where other substances capable of emitting gases and pollutants are used and where there is a need to counteract health risks.

Air pollutants are encountered partly in the form of gases and partly in the form of particles. Among the gaseous substances that are found in indoor air, apart from carbon dioxide and certain exhaust fumes, volatile substances in an average concentration of up to 16 mg/m<sup>3</sup>, organic compounds in concentrations of up to 9 mg/m<sup>3</sup>, monomer vapours, acrylates, toluene, isopropanol, ethanol, isobutanol, formaldehyde, chloroform, mercury, mercury vapour, nitrous oxide and the like can be mentioned. Among the particle pollutants, particles of amalgam, microscopic mercury drops, composite particles, pollen, spores of mould, bacteria, viruses, micro-organisms, inorganic dust, particles of dirt and the like can be mentioned. Cytotoxins, toxic gases, chemicals and various other pollutants can likewise be encountered.

The present invention performs the task of directing a jet of air at the placing unit and, in particular at one or several parts of the same or at the entire unit. The unit is provided with receiving openings that guide the directed jet of air to an exhaust-suction apparatus that removes the pollutants and allows purified air to flow out and be conveyed to the device that generates said directed jet of air. On its way to the device

- producing the directed jet of air, the purified air can pass one or several devices for further purification of the air. These devices can also act as purifiers for the air present in the treatment area where the placing unit is located. The device that generates the directed jet of air, can be
- 5 designed such that the out-flowing air is laminar and the device can further be designed such that the out-flowing air can be pulsating. The device can also regulate the temperature of the directed air jet. In addition, the present invention can be used as movable equipment within the health-care industry, as well as in other fields of work where
- 10 substances emitting gases and other toxic substances are handled.

Further particulars of the present invention appear in the appended claims.

- 15 Figure 1 shows an embodiment of the invention applied to a dentist's chair.

Figures 2, 3 and 4 show a movable embodiment of the invention.

- 20 Figure 5 shows an embodiment of the invention on a worktable.

Figure 6 shows the movable unit being transported.

- The number 1 designates an adjustable dentist's chair with an upper
- 25 part 2 for a head. The upper part comprises receiving nozzles communicating with a tube 3 that is connected to suction equipment 4 comprising arrangements for removing particles and undesired gases. The suction equipment can obviously comprise a fan, if so required. The airflows 5 from the suction device are automatically admitted to two
- 30 particle and gas purifiers 6 and 7. These gas purifiers can similarly be provided with fans and these gas purifiers are attached to the ceiling 8 of a treatment room. The device generating the directed jet of air 11 has been allocated designation number 9 and can be termed a generator or transmitter. The device 9 is mounted on a stand 10 that in one way or

another is placed near the placing unit or on the floor of the treatment room. The device 9 can be directed in any desired way whatsoever and, in relation to a dentist's chair, it is suitable to direct the device 9 as shown in the drawing, that is to say such that the jet of air 11 impinges  
5 on the head of the person being treated and on the area where the dentist is working, so that the patient, as well as the dentist, is subjected to a minimum of pollutants. The device 9 comprises the members required to produce a laminar flow. Furthermore, the device can be provided with members that regulate the speed of the directed jet of air.  
10 Other devices that can be encompassed by the device 9 are pulsation members for making the directed jet of air 11 pulsate and heating members for regulating the temperature of the directed jet of air 11.

As is clearly and explicitly shown in Figure 1, the device 9 emits a  
15 laminar jet of air 11 that is directed at a patient and a working dentist. Said jet of air 11 is thereafter caused to pass through a suction device 4 and air purified in the suction device is admitted to the devices 6 and 7 for further purification. Thereafter the air is admitted to the device 9 for generating a laminar jet of air. Thus, the air utilized at the treatment locus  
20 passes in a closed circuit. It will furthermore be obvious that the devices 6 and 7 also allow the air in the treatment area to pass through them and be purified. Thus, the units 6 and 7 fulfil two functions, namely to purify the treatment air as well as the air in the treatment area. Figure 2 shows a filter unit 4 that generates the air of the emitting means 9, which emits a  
25 laminar jet of air 11 towards the receiving means 13, comprising a work surface 12 that is provided with a suction grille. The pollutants are drawn down into the filter unit 4 via the tube 3. Figure 3 shows how the object to be treated can be placed on the work surface 12. How the emitting means 9 and the receiving means 13 can be fitted together is evident  
30 from Figure 4. As illustrated by Figure 5, the equipment can be used on a larger worktable, where the emitting unit 9 emits a laminar jet of air 11 down towards the receiving means 13, which consists of a work surface 12, comprising a work surface 12 provided with a suction grille. Furthermore, the receiving means 13 is provided along all its edges with

edge suction 15 and 16, communicating with the receiving means 13, which in turn communicates with a suction tube 3, extending from the receiving means 13 to the suction unit 3, which is provided with a gas and particle filter. As shown in Figure 6, the emitting means 9, the receiving means 13, the filter unit 4, and the tubes 3 and 14 can be assembled to form a movable unit. It is important to ascertain the correlation between the emitting speed of the laminar air and the receiving speed of the air that is admitted to attain the optimal emitting-receiving relationship. To obtain the best effect, the air jet should have full force up to approximately 50 mm above the receiving means, at which point it captures the flow of air. A target value for the air speed can be that the emitting speed and the receiving speed are the same.

15 It will be apparent that devices of the type indicated by designation number 9 can be used to obtain a jet of air directed at an operating table, at parts of the same or at the entire operating table or worktable.

## CLAIMS

1. A placing unit for a human being as a patient, which unit (1) can be an operating unit, a dentist's chair, a bed, a worktable and the like,  
5 characterized in that a device (9) subjects the unit to a jet of air (11) directed at a certain part of the unit (1), at several parts of the unit (1) or at the entire unit (1) and in that the air that passes the unit (1) is admitted to a purification part (4).
- 10 2. A placing unit as claimed in claim 1, characterized in that a number of devices (3, 4, 6 and 9) create an endless airflow (5), of which the directed jet of air (11) forms a part.
- 15 3. A placing unit as claimed in claim 2, characterized in that one of the devices (9) separates the directed jet of air (11) into preferably distinct jets.
- 20 4. A placing unit as claimed in claim 2, characterized in that absorption members, such as filters for pollutants, are contained in one or several of the devices (2, 4 and 6).
5. A placing unit as claimed in claim 2,  
25 characterized in that air-propulsion members, such as fans, are contained in one or several of the devices (4, 6, 7 and 9).
6. A placing unit as claimed in claim 2, characterized in that temperature-regulating  
30 members are contained in one or several of the devices 4, 6, 7 and 9).
7. A placing unit as claimed in claim 1, characterized in that the directed jet of air (11) is pulsating.



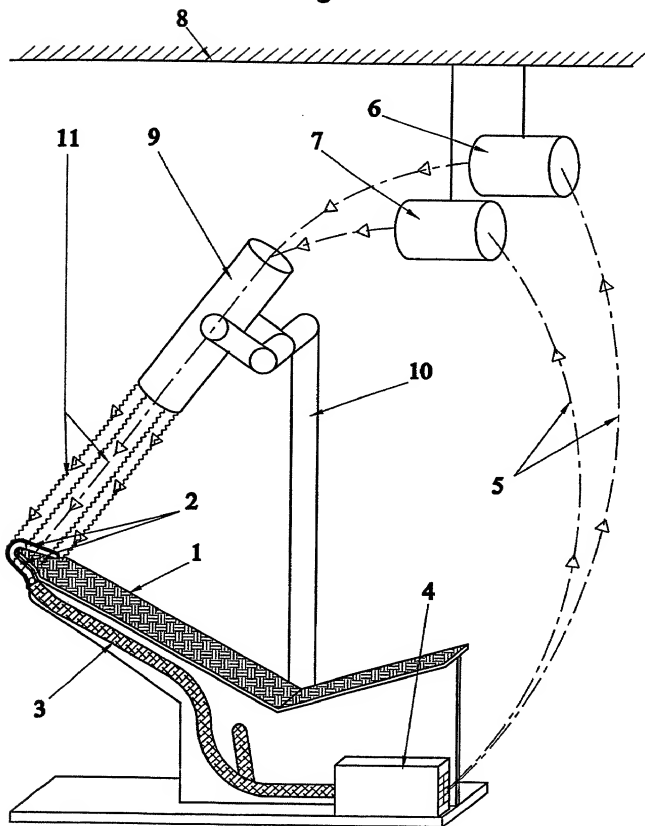
8. A placing unit as claimed in claim 1,  
characterized in that the device can consist of an  
emitting means (9), a receiving means (13) and a filter unit (4) that are  
connected by tubes (3 and 14).

9. A placing unit as claimed in claim 8,  
characterized in that the device consisting of an  
emitting means (9) and a receiving means (13) can be movable.

10. A placing unit as claimed in claim 1,  
characterized in that the receiving means (13) can  
be provided with edge suction along all edges.

11. A placing unit as claimed in claim 10,  
characterized in that the receiving means (13) can  
be provided with a work surface containing a suction grille.

12. A placing unit as claimed in claim 1,  
characterized in that the emitting means (9) can be  
provided with vanes for the laminar airflow and a particle filter (17).

1/4  
Fig. 1

2/4

Fig. 2

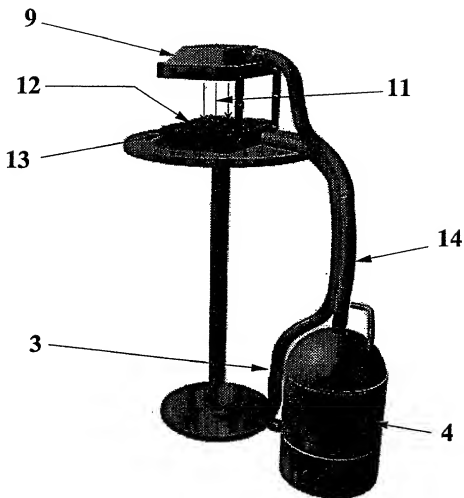


Fig. 3

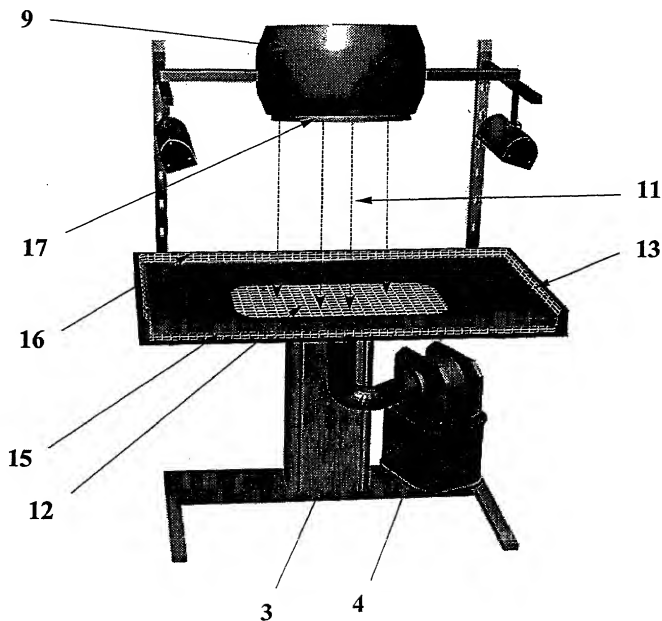


Fig. 4



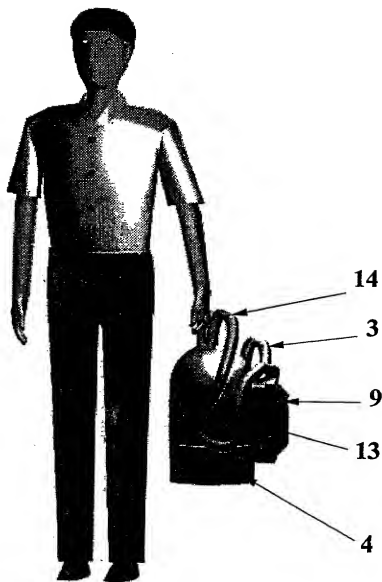
3/4

Fig. 5



4/4

Fig. 6



## DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION

Docket No. 01154

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled PLACING UNIT FOR A HUMAN BEING

specification of which

(check one) XX is described and claimed in PCT International Application PCT/SE00/00435filed on (MM/DD/YYYY) March 6, 2000 amended on \_\_\_\_\_

(if applicable)

(OR) \_\_\_\_\_ is described in United States Application Number \_\_\_\_\_

filed on (MM/DD/YYYY) \_\_\_\_\_ (OR) \_\_\_\_\_ is attached hereto.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Claimed? Yes No
9900868-2	Sweden	March 9, 1999	XX

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States Provisional Application(s) listed below.


I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or 365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:


As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

(5)

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Burton Scheiner

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Reg. No. 24018

Scott T. Wakeman  
Malcolm J. MacDonald

Reg. No. 37750  
Reg. No. 40250

Full name of second joint inventor George KINIGALAKIS

(First, Middle, Family Name or Surname)

Second inventor's signature

Date 2001-09-12

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(First, Middle, Family Name or Surname)

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